BRUHAT BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of Work: Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura

3RD & PART BILL

TEST REPORTS

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
☎ 080 - 23287532
email: tejusconsultants@gmail.com

TEJUS
CONSULTANTS

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Project	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Benaka Developers & Project Pvt.Ltd.		
Proposed Use	WMM	**Date of Sampling**	**07-02-20**
Sample Location	**At plant**	**Date of Testing**	**07-02-20**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	354.00	372.00	362.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	270.00	278.00	275.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	84.00	94.00	87.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	23.73	25.27	24.03	
5	Average Aggregate impact value	(%)	24.34			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Benaka Developers & Project Pvt.Ltd.

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	07-02-20
		Date of Testing	07-02-20

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	838	71	767	54
16.0	12.5	1248	112	1136	121
12.5	10.0	458	82	376	66
10.0	6.3	515	64	451	40
Total		**3059**	**329**	**2730**	**281**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.76
Elongation Index(%):	10.29
Combined FI+EL (%)	21.05

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	07-02-20
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	07-02-20
Type of material & Purpose:	WMM	**Date of testing:**	07-02-20
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	205	205	2.05	97.95	95-100
22.4	2540	2745	27.45	72.55	60-80
11.2	1785	4530	45.30	54.70	40-60
4.75	1910	6440	64.40	35.60	25-40
2.36	1400	7840	78.40	21.60	15-30
0.6	900	8740	87.40	12.60	8.0-22.0
0.075	870	9610	96.10	3.90	0-8
Pan	390				
Total	10000				

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mananagara Palike
Bangalore - 560 092

TEJUS
CONSULTANTS

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Name of Work	:	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Date of Testing	:	21-02-20
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	**Date of Sampling:**	21-02-20
Type of material & Purpose:	BC	**Date of testing:**	21-02-20
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	140	140.0	11.67	88.33	79 - 100
9.50	120	260.0	21.67	78.33	71 - 95
4.75	225	485.0	40.42	59.58	53 - 71
2.360	125	610.0	50.83	49.17	42 - 58
1.180	135	745.0	62.08	37.92	34 - 48
0.600	115	860.0	71.67	28.33	26 - 38
0.300	100	960.0	80.00	20.00	18 - 28
0.150	60	1020.0	85.00	15.00	12 - 20
0.075	105	1125.0	93.75	6.25	4 - 10
Pan	75.0				
Total	1200.0				

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

TEJUS CONSULTANTS

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mananagara Palike
Bangalore - 560 092

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-02-20
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.758	0.752	0.778
Final weight of plate after application of tack Coat (c)	Kg	0.781	0.775	0.801
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.250	0.256	0.251
Average	Kg/sq.m	0.252		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Improvements to roads and drains from 18th Cross to JNC Circle(Left Hand Side and Right Hand Side Roads from Renuka Yellamma Temple Road to JNC Circle) in Ward No.7,Byatarayanapura.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Benaka Developers & Project Pvt.Ltd.
Date of Testing :	21-02-20
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	850	853
2. Weight of Mixture after extraction, g	805	808
3. Weight of Bitumen	45	45
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	2.00
7. Weight of Bitumen & fines	47.10	47.00
8. Bitumen content in %	5.54	5.51
9. Average Bitumen content in %	**5.53**	
10. Minimum Bitumen content in %	**5.40**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	21-02-20	
Type of material & Purpose:	BC	Date of testing:	21-02-20	
		Oven Dry Wt.(gms):	805.0	

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	90	90.0	11.18	88.82	79 - 100
9.50	65	155.0	19.25	80.75	71 - 95
4.75	130	285.0	35.40	64.60	53 - 71
2.360	100	385.0	47.83	52.17	42 - 58
1.180	85	470.0	58.39	41.61	34 - 48
0.600	65	535.0	66.46	33.54	26 - 38
0.300	80	615.0	76.40	23.60	18 - 28
0.150	60	675.0	83.85	16.15	12 - 20
0.075	100	775.0	96.27	3.73	4 - 10
Pan	30.0				
Total	805.0				

ote:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples eived in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Authorised Signatory

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092